ORDER NO. TD94010479C2

5848

Service Manual

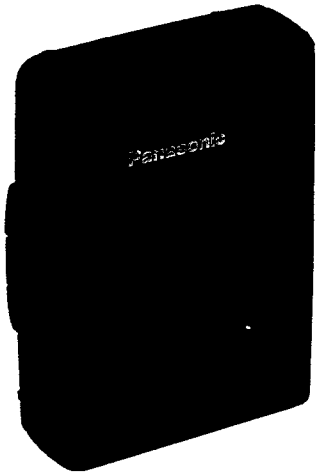
Radio Cassette

RQ-V60

Stereo Radio Cassette Player

Colour

(K)····· Black Type



Area

Suffix for Model No.	Areas	Colour
[E]	Europe	(K)
[EG]	Germany and Italy.	

■ SPECIFICATIONS CATIONS

General:

Power Requirement: Battery; 3V (Two "AA" size, R6/LR6 batteries)
AC; with optional AC adaptor RP-AC31
Power Output: 40mW (20mWx2)···RMS (max.)
Input: DC IN; 3V (⊖-⊂-⊕)
Output: Headphones; 16Ω, φ3.5
Dimensions: 85.7(W)x119.6(H)x32(D)mm
Weight: 151g without batteries

Radio Section:

Radio Frequency Range: FM; 87.5~108MHz
AM; 520~1610kHz
Intermediate Frequency: FM; 10.7MHz
AM; 459kHz
Sensitivity: FM; 5.01μV/0.5mW output (–3dB Limit, Sens)
AM; 125μV/m/0.5mW output

Tape Deck Section:

Frequency Response: 60~14,000Hz (Normal, CrO_2/Metal)
Tape Speed: 4.8cm/s
Program Time: 1 hour with C-60 cassette tape
Track System: 4-track, 2-channel, stereo playback

Notes:

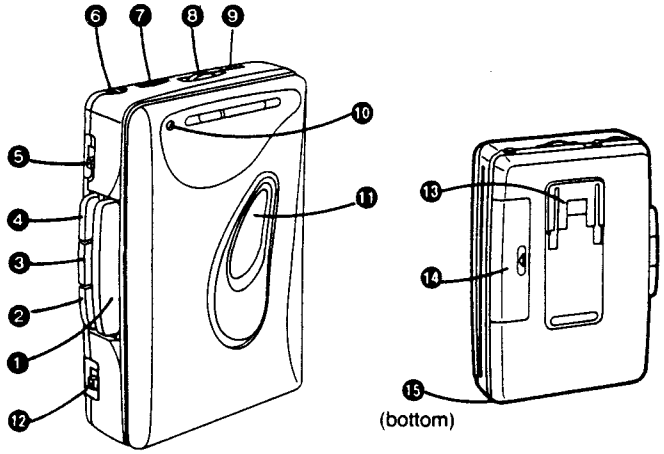
1. Weights and dimensions shown are approximate
2. Design and specifications are subject to change without notice.

Panasonic

5848

RQ-V60

■ LOCATION OF CONTROLS



❶ **Play button (PLAY ▶)**
❷ **Fast forward button (FF ▶▶)**
❸ **Rewind button (REW ◀◀)**
❹ **Stop button (STOP ■)**
❺ **Band/FM sensitivity selector (BAND/FM SENS)**
❻ **Headphones jack (∩) 16Ω, φ 3.5**
❼ **Volume control (VOLUME)**
❽ **Tuning control (TUNING)**
❾ **Function selector (SELECTOR)** RADIO/ TAPE OFF
❿ **FM stereo indicator (FM ST)**
⓫ **Cassette compartment**
⓬ **Tape Selector (NOR/CrO_2 MTL)**
⓭ **Clip receptacle**
⓮ **Battery compartment**
⓯ **DC input jack (DC IN 3 V ⊖-⊂-⊕)**

■ DISASSEMBLY INSTRUCTIONS

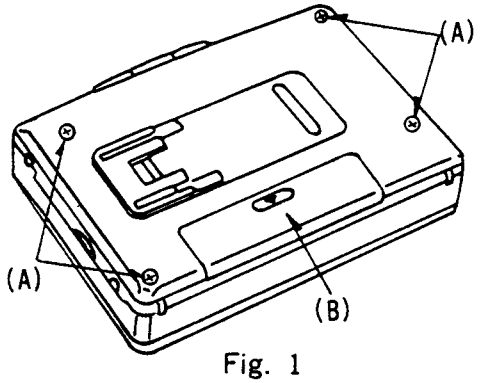


Fig. 1

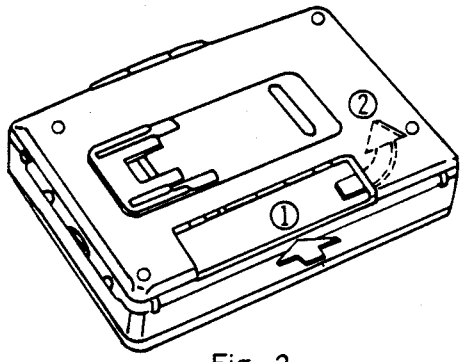


Fig. 2

●Removal of the Rear Cabinet

1. Remove the screws (A) (2×10)mm×4
2. Open the battery cover (B)×1
3. Remove the rear cabint in the direction of arrow①&②.

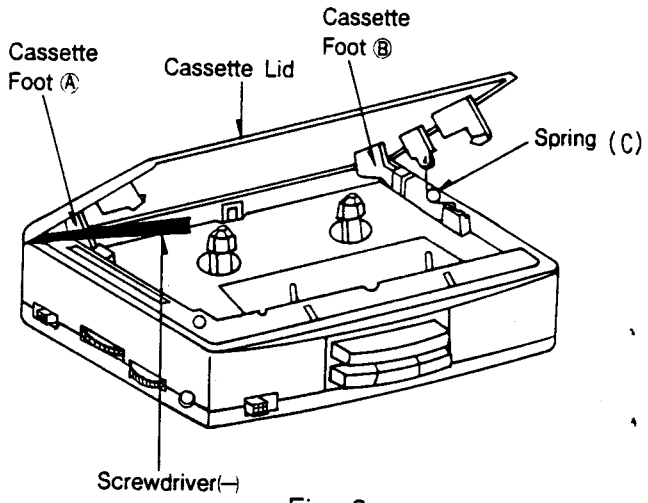


Fig. 3

●How to Removal of the Cassette Lid

Note: Be careful not to break cassette foots Ⓐ and Ⓑ when removing the cassette lid.

1. Open the cassette lid.
2. With a screwdriver, push cassette foot Ⓐ to the right as shown in Fig. 3, and then pull out the right side of the cassette lid.
3. Push cassette foot Ⓑ to the left and then pull out the cassette lid.
4. Remove the spring. (C)×1.

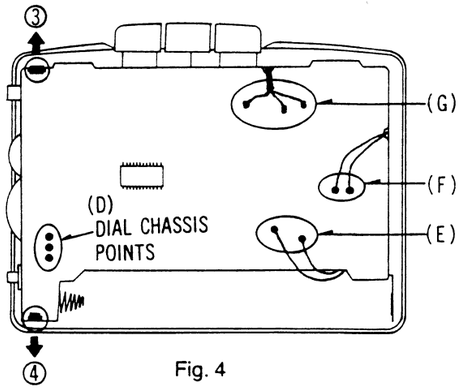


Fig. 4

●Removal of the Dial Chassis and Circuit Board (Fig. 4.).

1. Disconnect the solder (D).
2. Remove the dial chassis in the direction of arrow ③, ④.
3. Remove the solder (E), (F), (G) from flexible PC board.

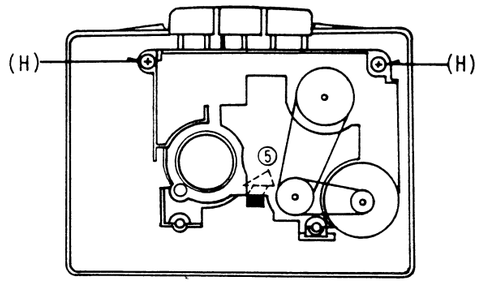


Fig. 5

●Removal of the Front Cabinet and Mechanism (Fig. 5.).

1. Remove the screws (H) (2×6)mm×2.
2. Remove the front cabinet & mechanism in the direction of arrow ⑤.

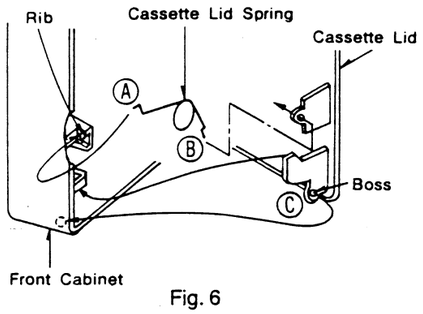


Fig. 6

●How to Replace the Cassette Lid Spring (Fig. 6).

1. Fit Part Ⓐ on the rib of the front cabinet.
2. Insert part Ⓑ in the hole in the cassette lid.
3. Fit the boss Ⓒ in the front cabinet.

●TO Removal of Tuning Gear

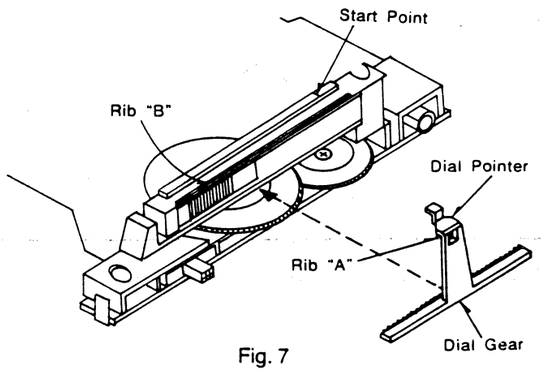


Fig. 7

1. Firstable turn the tuning shaft of the variable capacitor counter clockwise, to the end.
2. Second, before pointer be installed on chassis, pointer must be setted as shown.
3. Thire to in stalle pointer, inserted pointer by rib "A" to rib "B" of chassis.
4. Set the dial pointer to start point. (Fig. 7).

■MEASUREMENTS AND ADJUSTMENTS

●ALIGNMENT INSTRUCTION

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT	
1. Set volume control to maximum.	6. Output of signal generator should not be higher than necessary to obtain an output reading.
2. Set band selector switch to AM or FM.	7. Make sure heads are clean.
3. Set Function selector switch to radio or tape.	8. Make sure capstan and pinch roller are clean.
4. Set Tape Selector Switch to normal.	
5. Set power source voltage to 3.0V DC.	

●TUNER SECTION

AM ADJUSTMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
		CONNECTIONS	FREQUENCY				
		AM-IF ALIGNMENT					
(1)	AM	Fashion loop of several turns of wire and radiate signal into loop of receiver.	459kHz 30% Mod. at 400Hz	Point of non-interference. (on/ about 600kHz)	Headphones Jack (16Ω) (Fabricate the plug as shown in Fig.3 . and then connect the lead wires of the plug to the measuring instrument.	T1 (AM IFT)	Adjust for maximum output.
		AM-RF ALIGNMENT					
(2)	AM	〃	511 kHz···[E] only 516kHz···[EG] only	Tuning capacitor fully closed.	〃	L4 (AM OSC Coil)	Adjust for maximum output.
(3)	AM	〃	1650kHz···[E] only 1635kHz···[EG] only	Tuning capacitor fully open.	〃	CT4 (AM OSC Trimmer)	〃
(4)	AM	〃	550kHz	Tune to signal.	〃	(＊1) L1 (AM ANT Coil)	Adjust for maximum output. Adjust L1 by moving coil bobbin along ferrite core.
(5)	AM	〃	1,500kHz	〃	〃	CT1 (AM ANT Trimmer)	Adjust for maximum output. Repeat steps (2)～(5).

(＊1) Cement antenna bobbin with wax after completing alignment.

FM ALIGNMENT

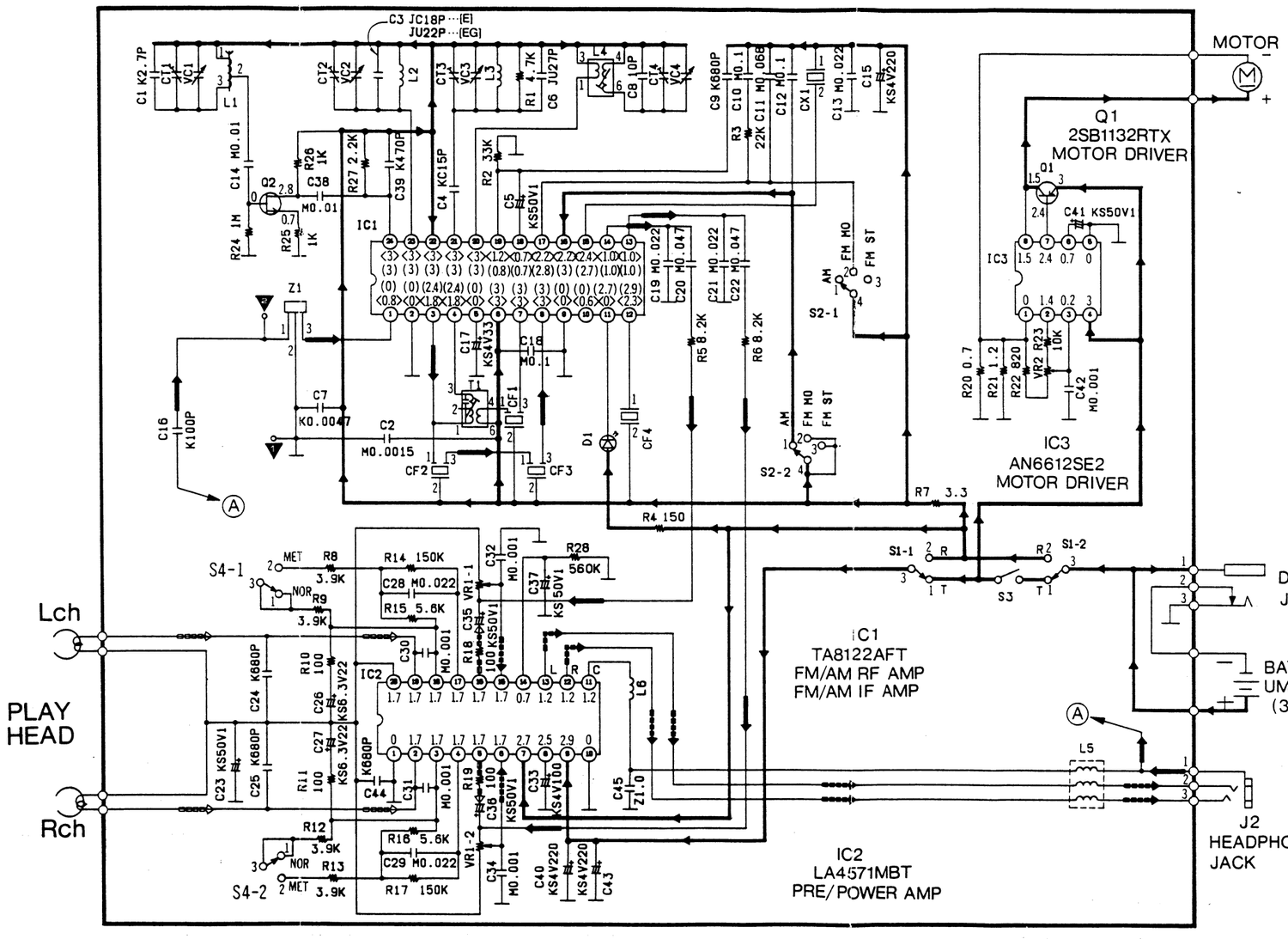
	BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
		CONNECTIONS	FREQUENCY				
		FM-RF ALIGNMENT					
(1)	FM	Connect to test point ▼1 through FM dummy antenna. Negative side to test point ▼2.	86.2MHz···[E] only 87.4MHz···[EG] only	Variable capacitor fully closed.	Headphones Jack (16Ω) (Fabricate the plug as shown in Fig.3 . and then connect the lead wires of the plug to the measuring instrument.	L3 (FM OSC Coil)	(＊2) Adjust for maximum output.
(2)	FM		109.3MHz···[E] only 108.35MHz···[EG] only	Variable capacitor fully open.		CT3 (FM OSC Trimmer)	〃
(3)	FM		90MHz	Tune to signal.		L2 (FM ANT Coil)	〃
(4)	FM		106MHz	〃		CT2 (FM ANT Trimmer)	(＊2) Adjust for maximum output. Repeat steps (3)～(6).

(＊2) Three output responses will be present; proper tuning is the center frequency.

●TAPE DECK SECTION

ITEM	INPUT	MEASUREMENT POINT	ADJUSTMENT POINT	PROCEDURE
Azimuth	QZZCFM (8kHz, −20dB)	Headphones Jack (16Ω) (Fabricate the plug as shown in Fig. 3 and then connect the lead wires of the plug to the measuring instrument.	Azimuth adjustment screw (Refer to Fig. 2)	Adjust the azimuth adjustment screw during repeated forward and reverse playback to obtain the maximum head azimuth allgnment with both channels equal. Then screw-lock the adjustment in place.
Tape speed	QZZCWAT (3kHz, −10 dB)		VR2 (Refer to Fig. 1)	Playback the central part of the tape and adjust VR2 so that the tape speed is as follows. 3000±60Hz (Forward & Reverse)

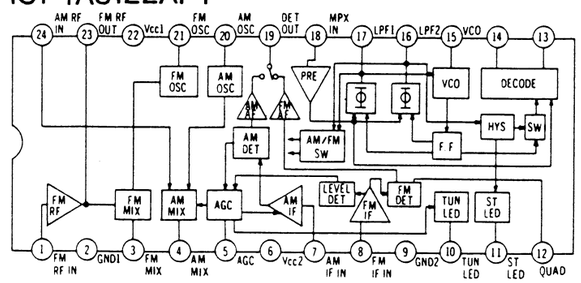
■SCHEMATIC DIAGRAM



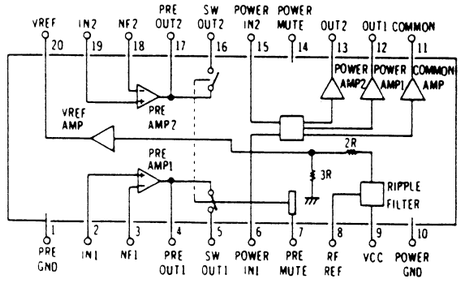
Notes:

1. S1-1～S1-2: Function switch in "Tape" position.
   (1·····TAPE, 2····RADIO)
2. S2-1～S2-2: Band select switch in "AM" position.
   (1···AM, 2···FM MONO, 3···FM ST.)
3. S3: Motor switch in "OFF" position.
4. S4-1, S4-2: Tape Selector Switch in "Normal" position.
   (1.... Normal, 2.... Metal)
5. VR1-1～1-2: Volume control VR.
6. VR2: Tape speed adjustment VR.
7. DC voltage measurement are taken with electronics voltmeter from negative terminal of battery.
   < >···FM position, ( )···AM position.
   No mark·····Playback position,
8. ▬▶ +B Voltage Line.
   ▭▭▭▷ Playback Signal.
   ▬▬▶ FM Signal.
   ▬▭▬▶ Playback and Radio Signal.
9. Battery current: Volume minimum output (Radio)·····35mA
   Volume Maximum output (Radio)····· 45mA
   Volume minimum output (Tape)·····180mA
   Volume Maximum output (Tape)···· 200mA
   (Radio, 74dB 30% Modulation
   Tape, 315 Hz 0dB tape playback)
10. The mark (▼) shows test point e.g. ▼=test point 1.

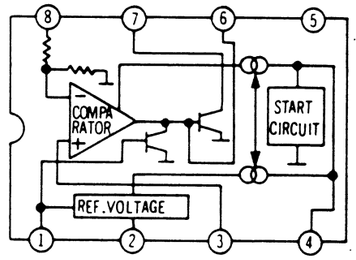
IC1 TA8122AFT

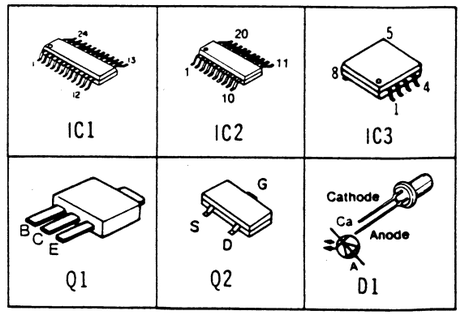


IC2 LA4571MBT

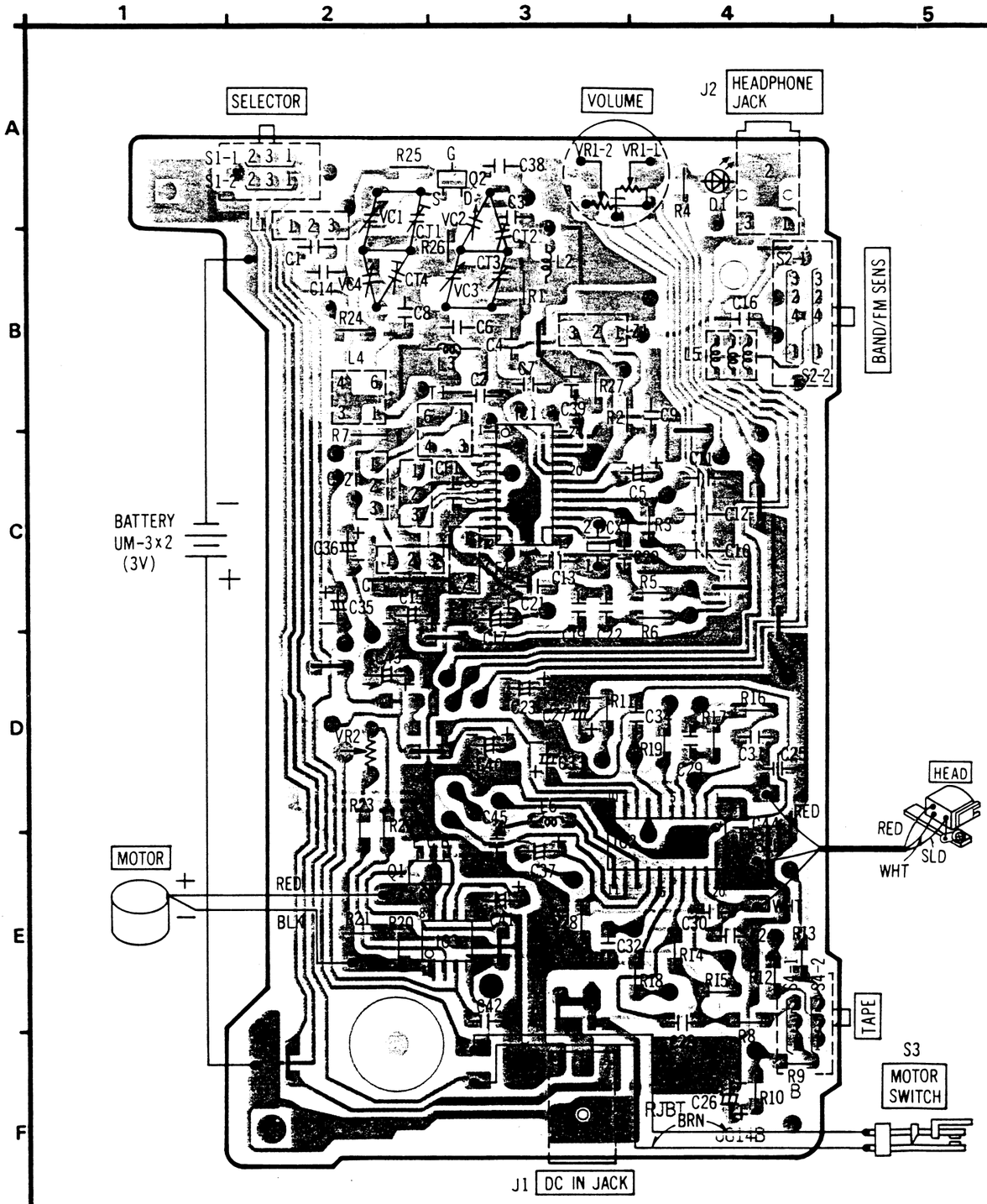


IC3 AN6612SE2





■CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM



■REPLACEMENT PARTS LIST

T Indicates parts that are supplied by TAMACO.

Ref. No.	Parts No.	Parts Name & Description
	INTEGRATED CIRCUIT, TRANSISTORS AND DIODES	
IC1 T	TA8122AFT	I.C. FM RF AMP
IC2 T	LA4571MBT	I.C. AMP
IC3	AN6612SE2	I.C. MOTOR DRIVE
Q1	2SB1132RTX	Transistor
Q2	2SK543DTW	Transistor
D1 T	EL1334HD	L.E.D.
	COILS AND TRANSFORMERS	
L1 T	REKT0005-L	Ferrite Bar Antenna Ass'y (Withe Antenna Chassis)
L2 T [E]	RLO4Y15-2	Antenna Coil FM
L2 [EG]	RLO4Y15	Antenna Coil FM
L3 T [E]	RLO4Y19-4	Oscillator Coil FM
L3 T [EG]	RLO4A001-Z	Oscillator Coil FM
L4 T	RLO2A010M-M	Oscillator Coil FM
L5 T	RLQZ010K-M	RF. Choke Coil
L6 T	RLJFA1R0KT-D	Coil
T1 T	RLI2A37M-M	I.F.T. AM
	VARIABLE RESISTOR	
VR1 T	RVV2H3A14-A	V.R. Volume
VR2 T	EVNDXAA02B32	V.R. Tape Speed Control
	VARIABLE CAPACITOR	
VC1 - 4 T	RCV4PCT6R-T	Tuning Capacitor W/Trimmer Capacitor (CT1 ~ 4)
	CERAMIC FILTER AND CRYSTAL	
CF1	RVFPFA459A	Ceramic Filter AM
CF2,3 T	RLFFETWL05ZD	Ceramic Filter FM
CF4 T	RLFDFT08ZD	Ceramic Filter FM
CX1 T	RSXZ456KM05	Ceramic Filter FM
	COMPONENT COMINATION	
Z1	RCRBMT002-H	Band Pass Filter
	SWITCHES	
S1 T	RSS2B54UA-K	SW. Function
S2 T	RSS3B35YA-K	SW. BAND
S3 T	RFA114ZA	SW. Motor
S4 T	RSS2B54YA-K	SW. Tape
	JACKS	
J1	RJJ4302-C	DC IN Jack
J2	RJJD3S5ZB-C	Headphones Jack

Ref. No.	Parts No.	Ref. No.	Parts No.
	RESISTORS		**CAPACITORS**
R1 T	ERD10TLJ472Y	C1 T	ECBL1H5R6KY
R2 T	ERD10TLJ333Y	C2 T	ECBL1C152MXY
R3 T	ERD10TLJ223Y	C3 [E] T	ECBL1H180JCY
R4 T	ERD10TLJ151Y	C3 [EG] T	ECBL1H220JUY
R5,6 T	ERD10TLJ822Y	C4 T	ECBL1H150KCY
R7 T	ERD10TLJ3R3Y	C5,23, 35,37 36,41	ECEA1HKS010I
R8,9,12, 13 T	ERD10TLJ392Y	C6 T	ECBL1H270JUY
R10,11, 18,19 T	ERD10TLJ101Y	C7 T	ECBL1C472KXY
R14,17 T	ERD10TLJ154Y	C8 T	ECBL1H100KCY
R15,16 T	ERD10TLJ562Y	C9,24, 25,44 T	ECBL1H681KBY
R20 T	ERSL39JR70U	C10,12 T	ECFL1C104MR
R21 T	ERD10TLJ1R2Y	C11 T	ECFL1C683MR
R22 T	ERD10TLJ821Y	C13 T	ECUV1E223MBM
R23 T	ERD10TLJ103Y	C14,38 T	ECBL1C103MYY
R24 T	ERD10TLJ105Y	C15,40, ,43	ECEA0GKS221I
R25,26 T	ERD10TLJ102Y	C16 T	ECBL1H101KBY
R27 T	ERD10TLJ222Y	C17	ECEA0GKS330I
	CHIP AND MELF JUMPERS	C18	ECUV1C104MBM
RJ1 ~ 10 T	ERD10TLJ000Y	C19,21, 28,29 T	ECBL1E223ZFY
		C20,22 T	ECUV1C473MBM
		C26,27	ECEA0JKS220I
		C30,31, 32,34, 42 T	ECBL1H102MBY

NOTES:

BLK .....Black	ORG .....Orange
BLU .....Blue	PNK.....Pink
BRN.....Brown	RED .....Red
GRY.....Gray	SLD .....Shield Wire
GRN .....Green	VLT.....Violet
L. BLU ....Light Blue	WHT .....White
NIL.....No Color Mark	YEL.....Yellow

Notes:

1. The circuit shown in (■) on the conductor indicates printed circuit on the back side of the printed circuit board.
2. The circuit shown in ( ) on the conductor indicates printed circuit on the front side of the printed circuit board.
3. The symbols (●) shown in the circuit board indicate connection points between conductors on the front side and back side of the circuit board.
4. ●——●: Chip resistor
5. ●——●: Chip jumper

•This circuit board diagram may be modified at any time with the development of new technology.

• ALIGNMENT POINTS

Please refer to the Circuit Board and Wiring Connection Diagram to locate the test points.

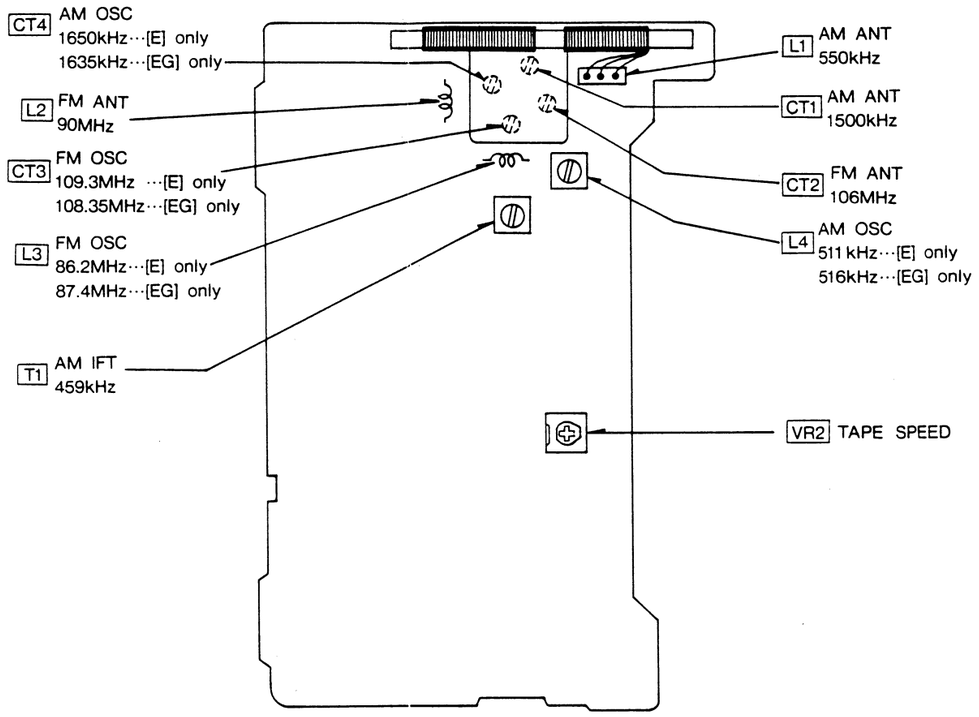


Fig. 1

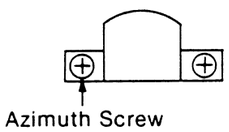


Fig. 2

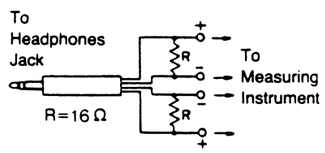
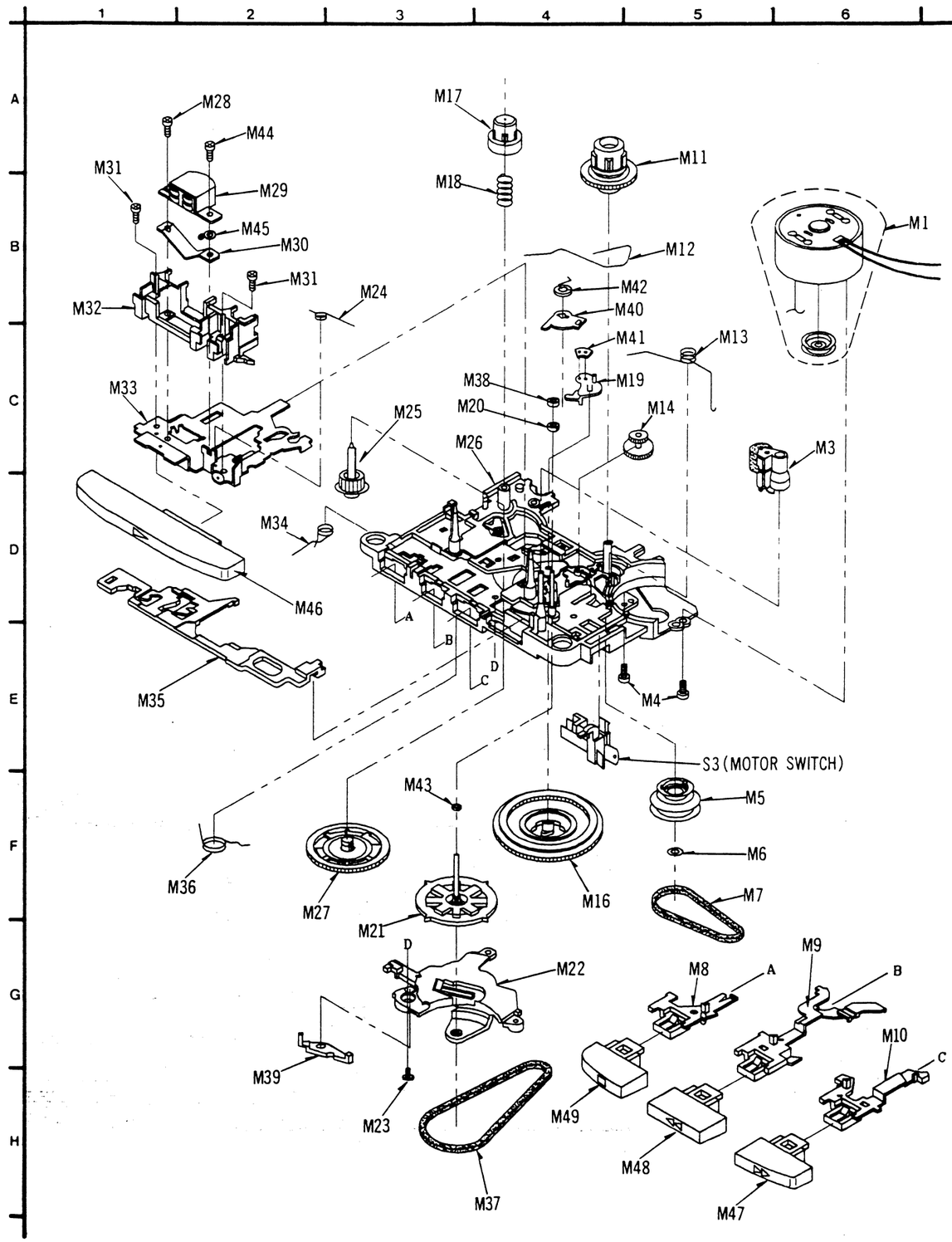


Fig. 3

■ MECHANISM PARTS LOCATION



8 9 10 11 12

SPECIFICATIONS

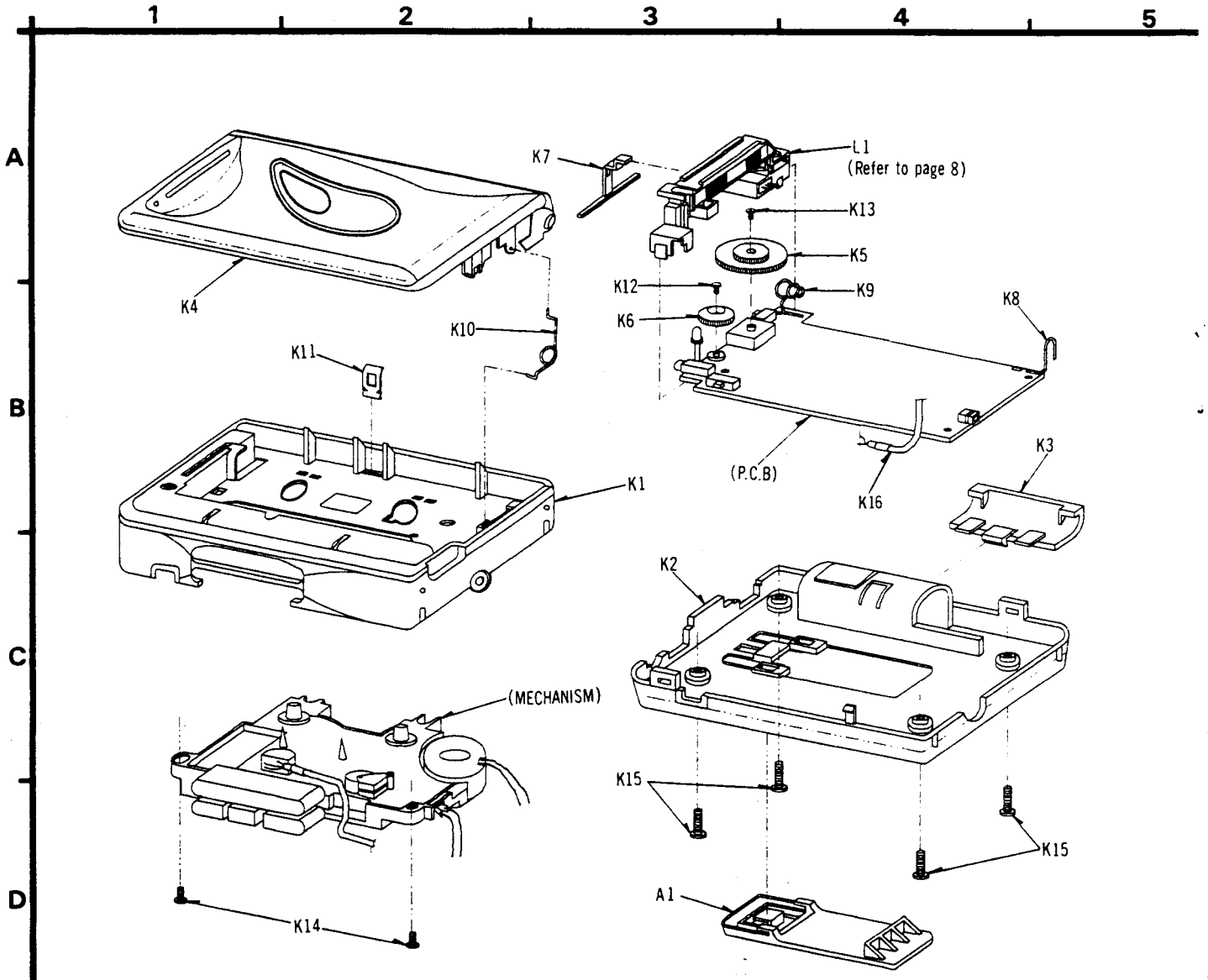
Pressure of Pressure roller	160gr
Wow & flutter	Less than 0.3% (WRMS)
Playback torque	23～ 43gr-cm
FF torque	60～160gr-cm
REW torque	60～160gr-cm

■ REPLACEMENT PARTS LIST

Ⓣ Indicates parts that are supplied by TAMACO

Ref No.	Part No.	Part Name & Description
	MECHANICAL PARTS	
M1Ⓣ	**RFKPQV60P**	Motor Ass'y
M3Ⓣ	**RFR77ZA**	Pinch Roller Arm Ass'y
M4Ⓣ	**RFE598ZA**	Tapping Screw
M5Ⓣ	**RFQ75ZA**	Trans Pulley
M6Ⓣ	**RFN246ZA**	Lumilar Washer
M7Ⓣ	**RFB124ZA**	M. Belt
M8Ⓣ	**RFY1067ZA**	Stop Lever
M9Ⓣ	**RFY1068ZA**	Rwd Lever
M10Ⓣ	**RFY1069ZA**	FF Lever
M11Ⓣ	**RFJ102ZA**	Take Up Reel Ass'y
M12Ⓣ	**RFS976ZA**	Sensor Spring
M13Ⓣ	**RFS977ZA**	HP Spring
M14Ⓣ	**RFG173ZA**	T. Up. Gear
M16Ⓣ	**RFG174ZA**	Cam Gear
M17Ⓣ	**RFJ103ZA**	Rwd Reel Hub
M18Ⓣ	**RFS978ZA**	B. T Spring
M19Ⓣ	**RFY1070ZA**	Auto Lever
M20Ⓣ	**RFX185ZA**	HLW Cut (Washer)
M21Ⓣ	**RFF95ZA**	Flywheel Ass'y
M22Ⓣ	**RFD448ZA**	FL Bracket
M23Ⓣ	**RFX186ZA**	PST (Screw)
M24Ⓣ	**RFS979ZA**	PR Spring
M25Ⓣ	**RFG175ZA**	Rwd Hub Gear
M26Ⓣ	**RFU225ZA**	Chassis Ass'y
M27Ⓣ	**RFG176ZA**	Rwd Gear
M28Ⓣ	**RFE599ZA**	Screw
M29Ⓣ	**RBR4CM003-S**	P. Head
M30Ⓣ	**RFS980ZA**	Head SPR-PL
M31Ⓣ	**RFE600ZA**	Tapping Screw
M32Ⓣ	**RFE601ZA**	Tape Guide
M33Ⓣ	**RFU226ZA**	Head Panel
M34Ⓣ	**RFS981ZA**	Stop Spring
M35Ⓣ	**RFY1071ZA**	Lock Plate
M36Ⓣ	**RFS982ZA**	FR Spring
M37Ⓣ	**RFB125ZA**	FL Belt
M38Ⓣ	**RFN247ZA**	HLW (Washer)
M39Ⓣ	**RFX187ZA**	FF Stopper
M40Ⓣ	**RFY1072ZA**	A Push Arm
M41Ⓣ	**RFY1073ZA**	Blance Plate
M42Ⓣ	**RFN248ZA**	PW Cut 1.2 X 0.3
M43Ⓣ	**RFN249ZA**	HLW 1.2 X 3 X 0.13
M44Ⓣ	**RFE603ZA**	+－ Screw 2X 3.6
M45Ⓣ	**RFE604ZA**	LUG Plate
M46Ⓣ	**RGUT0014-K**	Button, Play
M47Ⓣ	**RGUT0015-K**	Button, FF
M48Ⓣ	**RGUT0016-K**	Button, REW
M49Ⓣ	**RGUT0017-K**	Button, Stop

■ CABINET PARTS LOCATION



■ REPLACEMENT PARTS LIST

T Indicates parts that are supplied by TAMACO.

Ref. No.	Parts No.	Parts Name & Description
	CABINET PARTS	
K1 T	RKMT0004A-K	Front Cabinet
K2 T [E]	RKST0004B-K	Rear Cabinet
K2 T [EG]	RFKKQV60EG	Rear Cabinet Ass'y
K3 T	RKKT0004-K	Battery Cover
K4 T [E]	RKFT0007B-Q	Cassette Cover
K4 T [EG]	RKFT0007A-Q	Cassette Cover
K5 T	RGWT0002-K	Knob Tuning
K6 T	RGWT0003-K	Knob Volume
K7 T	RGJT0001-W	Pointer
K8 T	RJCT30003	Battery Terminal (+)
K9 T	RJCT70003	Battery Terminal (−)
K10 T	RUS261TZA	Cassette Cover Spring
K11 T	RUS262TZA	Tape Spring
K12 T	XSH14+4	Screw
K13 T	XSH17+3	Screw
K14 T	RHD006TZA	Screw
K15	XTNR2+10CFZ	Screw
K16 T	ZA03V60	Head Wire
	ACCESSORY	
A1 T	RKE210TZA-1	Belt Clipper
A2 T	RP-HT102PY-Y	Headphones
A3 T	RQTT0056-E	Instruction Manual
	PACKING MATERIALS	
P1 T	RPNT0049	Blister (Rear)
P2 T	RFNT0050	Blister (Front)
P3 T	RPKT0022	Carton Box
P4 T	RPFT0001	Polyethylene Cover

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